IN THE SPECIFICATION:

The following amended paragraphs, insertions are shown by underlining and deletions are shown either through strike-through or double brackets.

Please replace paragraph **[002]** with the following amended paragraph:

[002] This application is also a continuation-in-part under 37 C.F.R. § 1.53(b) of U.S. Pat. Application Ser. No. 09/723,564 filed November 28, 2000 (Attorney Docket No. 6270/48) now U.S. Pat. No. 6,961,641, issued on November 1, 2005,[[_____,]] the entire disclosure of which is hereby incorporated by reference. U.S. Pat. Application Ser. No. 09/723,564 is a continuation-in-part under 37 C.F.R. § 1.53(b) of U.S. Pat. Application Ser. No. 08/798,723 filed February 12, 1997 (Attorney Docket No. 6270/9), abandoned, the entire disclosure of which is hereby incorporated by reference, which is a continuation-in-part under 37 C.F.R. § 1.53(b) of U.S. Pat. Application Ser. No. 08/369,849 filed December 30, 1994 (Attorney Docket No. 6270/6) now U.S. Pat. No.5,650,936, the entire disclosure of which was incorporated by reference.

Please replace paragraph **[0047]** with the following amended paragraph:

[0047] The communications applications include electronic mail client applications such as applications which support Simple Mail Transfer Protocol ("SMTP"), Multipurpose Internet Mail Extensions ("MIME") or Post Office Protocol ("POP") network communications protocols, security client applications such as encryption/decryption or authentication applications such as secure-HTTP or secure sockets layer ("SSL"), or other clients which support standard network communications protocols such as telnet, hypertext transport protocol ("HTTP"), file transfer protocol ("FTP"), network news transfer protocol ("NNTP"), instant messaging client applications, or combinations thereof. Other client application protocols include extensible markup language ("XML") client protocol and associated protocols such as Simple Object Access Protocol ("SOAP"). Further, the communications applications could also include client applications which support peer to peer communications. All of the communications applications preferably include the ability to communicate via the security client applications to secure the communications transmitted via the network from unauthorized access and to ensure

that received communications are authentic, uncompromised and received by the intended recipient. Further, the communications applications include the ability to for redundant operation through the use of one or more interface layer components (discussed in more detail below), error detection and correction and the ability to communicate through firewalls or similar private network protection devices.

Please replace paragraph **[0050]** with the following amended paragraph:

[0050] Figure 1 illustrates an overview of the preferred embodiment of the Power Management Architecture ("architecture") 100, which contains one or more IED's 102, 103, 104, 105, 106, 107, 108, 109. The IED's 102-109 are connected to an electrical power distribution system 101, or portion thereof, to measure, monitor and control quality, distribution and consumption of electric power from the system 101, or portion thereof. The power distribution system is typically owned by either a utility/supplier or consumer of electric power however some components may be owned and/or leased from third parties. The IED's 102-109 are further interconnected with each other and back end servers 120, 121, 122, 123, 124 via a network 110 to implement a Power Management Application ("application") ~~111~~ 211 (not shown). In the preferred embodiment, the network 110 is the Internet. Alternatively, the network 110 can be a private or public intranet, an extranet or combinations thereof, or any network utilizing the Transport Control Protocol/Internet Protocol ("TCP/IP") network protocol suite to enable communications, including IP tunneling protocols such as those which allow virtual private networks coupling multiple intranets or extranets together via the Internet. The network 110 may also include portions or sub-networks which use wireless technology to enable communications, such as RF, cellular or Bluetooth technologies. The network 110 preferably supports application protocols such as telnet, FTP, POP3, SMTP, NNTP, Mime, HTTP, SMTP, SNNP, IMAP, proprietary protocols or other network application protocols as are known in the art as well as transport protocols SLIP, PPP, TCP/IP and other transport protocols known in the art.

Please replace paragraph **[0051]** with the following amended paragraph:

[0051] The Power Management Application ~~111~~ 211 utilizes the architecture 100 and comprises power management application components which implement the particular power management functions required by the application ~~111~~ 211. The power management application components are located on the IED 102-109 or on the back end server 121-124, or combinations thereof, and can be a client component, a server component or a peer component. Application components communicate with one another over the architecture 100 to implement the power management application ~~111~~ 211.

Please replace paragraph **[0052]** with the following amended paragraph:

[0052] In one preferred embodiment the architecture 100 comprises IED's 102-109 connected via a network 110 and back end servers 120, 121, 122, 123, 124 which further comprise software which utilizes protocol stacks to communicate. IED's 102-109 can be owned and operated by utilities/suppliers 130, 131, consumers 132 133 or third parties 134 or combinations thereof. Back end servers 120 121 122 123 124 can be owned by utilities/suppliers 130, 131, consumers 132, 133, third parties 134 or combinations thereof. For example, an IED 102-109 is operable to communicate directly over the network with the consumer back-end server 120, 121, another IED 102-109~~19~~ or a utility back end server 123,124. In another example, a utility back end server 123, 124 is operable to connect and communicate directly with customer back end servers 120, 121. Further explanation and examples on the types of data and communication between IED's 102-109 are given in more detail below.

Please replace paragraph **[0053]** with the following amended paragraph:

[0053] Furthermore, the architecture's 100 devices, such as the back end servers 120-124 or IED's 102-109, can contain an email server and associated communications hardware and software such as encryption and decryption software. Other transfer protocols, such as file transfer protocols (FTP), Simple Object Access Protocol (SOAP), HTTP, XML or other protocols know in the art may also be used in place of electronic mail. Hypertext Transfer Protocol (HTTP) is an application protocol that allows transfer of files to devices connected to

the network. FTP is a standard internet protocol that allows exchange of files between devices connected on a network. Extensible markup language (XML) is a file format similar to HTML that allows transfer of data on networks. XML is a flexible, self describing, vendor-neutral way to create common information formats and share both the format and the data over the connection. In the preferred embodiment the data collection server is operable by either the supplier/utility ~~123, 124~~ 130, 131 or the customer 132, 133 of the electrical power distribution system 101. SOAP allows a program running one kind of operating system to communicate with the same kind, or another kind of operating system, by using HTTP and XML as mechanisms for the information exchange.

Please replace paragraph **[0056]** with the following amended paragraph:

[0056] Figure 2a illustrates a preferred embodiment where and IED 200 contains several power management components 201 202 203 and power management circuitry 220. The power management circuitry 220 is operable to implement the IED's functionality, such as metering/measuring power delivered to the load 218 from the electrical power distribution system 216, measuring and monitoring power quality, implementing a protection relay function, or other functionality of the IED 200. The IED 200 further includes a power management application components 211 coupled with the circuitry 220 and a protocol stack 212 and data communication interface 213. The protocol stack 212 and data communications interface 213 allow the IED 200 to communicate over the network 215. It will be appreciated that, as described below, the protocol stack 212 may include an interface layer which comprises the data communications interface 213. The power management application ~~components~~ 211 includes software and/or hardware components which, alone, or in combination with other components, implement the power management application 111. The components 201 202 203 ~~211~~ may include components which analyze and log the metered/measured data, power quality data or control operation of the IED 200, such as controlling a relay circuit. The components 201 202 203 ~~211~~ further include software and/or hardware which processes and communicates data from the IED 200 to other remote devices over the network 215, such as back end servers 121-124 or other IED's 200 (102-109), as will be described below. For example, the IED 200 is connected to a load 218. The power management circuitry 220 includes data logging software applications,

memory and a CPU, which are configured to store kWh data from the load 218 in a memory contained within the power management circuitry. The stored data is then read and processed by the components 201 202 203 in the power management application 211. The components communicate with operating system components which contain the protocol stack 212 and the processed data is passed over the network 215 to the appropriate party via the data communications interface 213. One or more of the components 201 202 203 ~~211~~ may communicate with one or more application components located on one or other IED's 200 and/or one or more back end servers 121-124.

Please replace paragraph **[0057]** with the following amended paragraph:

[0057] Figure 2b illustrates an alternate preferred embodiment where an IED 240 is provided which includes power management application components 290. A load 280 is connected to an IED 240 via the electrical power distribution system 281. The IED 240 is further connected to the network 283. The IED 240 contains power management circuitry 282 which is operable to implement the IED's functionality, such as receiving power and generating data from the load 280. The IED further includes a protocol stack layer 284 and a data communication interface 286 which allows the back end server to communicate over the network 283. The power management application components 290 include one or more components such as data collection component 250, an automated meter reading component 253 and a billing/revenue management component 252, which may be revenue certified, a peer-to-peer power management component 257, a usage and consumption management component 258, a distributed power management component 254, a centralized power management component 255, a load management component 259, an electrical power generation management component 260, an IED inventory component 261, an IED maintenance component 262, an IED fraud detection component 263, a power quality monitoring component 264, a power outage component 265, a device management component 251, a power reliability component 256, or combinations thereof. Furthermore, components contained on one IED 240 may operate simultaneously with components on an IED 102-109, 200 or another IED 240 or back end server (not shown). More component details and examples are given below.

Please replace paragraph **[0058]** with the following amended paragraph:

[0058] In one embodiment the application components comprise software components, such as an email server or an XML or HTTP server. These servers may include a Microsoft Exchange server or a BizTalk framework/XML compatible server. A Microsoft Exchange™ server is an email server computer program manufactured by Microsoft Corporation, located in Redmond, Washington, typically operating on a server computer which facilitates the reception and transmission of emails, and forwards emails to the email client programs, such as Microsoft Outlook™, of users that have accounts on the server. BizTalk is a computer industry initiative which promotes XML as the common data exchange for e-commerce and application integration over the internet. BizTalk provides frameworks and guidelines for how to publish standard data structures in XML and how to use XML messages to integrate software components or programs. Alternately, hardware components, such as a dedicated cellular phone, GPS encryption or decryption key or dongle are included in the components. In a further embodiment, a combination of both hardware and software components are utilized. Additionally, referring back to Figure 1, one or more power management application components 290 can utilize the architecture 100 to implement their functionality. For example, a utility 130 has a back end server 124 which contains power management application and associated components, such as a usage and consumption ~~monitoring~~ management component 258. The utility 130 supplies power to a consumer 132 via the ~~power distribution~~ network 110 and monitors the consumers power consumption using the power management application components on the back end server 124 which communicates with the IED's 104, 105, 108 via the network 110 to retrieve measured consumption/usage data. The consumer 132 concurrently monitors usage of loads 150 151 153, where generator 152 supplies power to usage load 153, using an IED 104, 105, 108 which is connected to the network 110, computing real time costs posted by the utility 130. A second customer 133 can also concurrently monitor usage loads 155 156 157 where generator 154 supplies power to usage load 157. In one embodiment, the consumer 132 monitors usage using back end server 120 which receives usage and consumption data from the IED's 104, 105, 108 via the network 110. The IED 104, 105, 108 implements power management application components such as load management components and billing management components. The back end server 120, 124 implements power management application components such as a data collection component, a billing/revenue management

component, an automated meter reading component or a usage/consumption management component. The components on the IED 104, 105, 108 work in concert with the components on the back end server 120, 124 via the network 110 to implement the overall power management application. In a further embodiment, one or more power management application components are operating on IED 104, 105, 108 and/or back end servers 120, 124 at any given time. Each power management application can be utilized by one or more users, or different applications can be used by different users. Moreover, the application components can exist on the same or different IED's 104, 105, 108 or back end servers 120, 124.

Please replace paragraph **[0061]** with the following amended paragraph:

[0061] Figure 3b illustrates a more detailed embodiment of the IED's 310 power management application components 311 and protocol stacks. The IED 310 includes power management application components 311, a communications protocol stack 312 and a data communications interface 313 (as was noted above, in alternate embodiments, the protocol stack 312 may include the data communications interface 313). The application components 311 includes a Load management component 315a, which measures the load's 317 ~~301~~ consumption of electrical power from the portion of the power distribution system 316, a Power Quality component 315b, which measures power quality characteristics of the power on the portion of the power distribution system 316, and a billing/revenue management component 315c, which computes the quantity and associated value of the incoming power. The power management components are connected to the network via the data communications interface 313 ~~312~~ using the communications protocol stack 312 (described in more detail below).

Please replace paragraph **[0064]** with the following amended paragraph:

[0064] In operation the IED monitors the power distribution system for events such as wave shape deviation, sag, swell, kWh, kvA or other power usage, consumption, or power quality events and disturbances. In one embodiment, when the IED detects an event, it processes the event and generates an email message using an email client application component for transport over the network to a back end data collection server. Raw data 330, such as the error message

generated from the IED or a billing signal, is passed into the application layer's 321 Security Sub-layer 321a where it is encrypted before email protocol packaging 321b takes place. Once the data 330 has been encrypted and packaged, the message is passed through the remaining IP layers 326 where the message is configured for transmission and sent to the destination address. In one embodiment, the destination address is for a back end server implementing a data collection application component. This back end server may be operated by the consumer or supplier of electrical power or a third party as described above. In an alternate embodiment the Security Sub-layer 321a includes authentication or encryption, or alternately the Security Sub-layer 321a is bypassed. The application layer may include application components which implement protocols that are designed to pass through a firewall or other type of software that protects a private network coupled with a publicly accessible network. Multiple redundant data messages may be sent from the IP layer to ensure the complete data packet is received at the destination. In the above operation, the protocol stack, which includes an SMTP or MIME enabled email client, is a scalable, commercial product such as the Eudora™ email client manufactured by Qualcomm, Inc., located in San Diego, California. In an alternate embodiment data messages may also be sent to redundant destination email addresses to ensure delivery of the message. Quality of Service (QoS) may also be implemented, depending on the volume of bandwidth required for the data, ensuring reliable and timely delivery of the data. QoS is based on the concept that transmission rates, error rates, and other characteristics of a network can be measured, improved and, to some extent, guaranteed in advance. QoS is a concern for continuous transmission of high-bandwidth information. The power quality events, consumption, disturbances or other usage data may be stored in the IED and sent to the destination address upon request from an application component operating at the destination address, upon pre-determined time intervals and schedules, upon pre-defined events or in real time. In an alternate embodiment a IED may transport data or requests to or receive data or requests from other IED's directly, also know as peer-to-peer communications. Peer-to-peer is a communications model in which each party or device has the same capabilities and either party or device can initiate communication sessions.

Please replace paragraph **[0066]** with the following amended paragraph:

[0066] In operation the IED monitors the power distribution system 300 ~~301~~ for billing events such as, kWh or kvA pulses. In one embodiment the IED may store billing events and transport the data to the power management application components operating on a back end server either upon request or upon pre-determined time intervals. Alternately the IED may transport billing event data in real time to the back end server. Data may be filtered through the either the Back End Server's or IED's power management components or any combination or variation thereof, before being entered into the Billing/Revenue Management component where billing, revenue, cost and usage tracking are computed into revised data. The Billing/Revenue Management components either stores the computations for future retrieval or pushes the revised data to the appropriate party, such as the consumer or provider of the electric power system. Data can be retrieved upon command or sent or requested upon a scheduled time.

Please replace paragraph **[0069]** with the following amended paragraph:

[0069] The power management functions implemented by the IED's enables the back end servers or IED's to control power flow and distribution over the electrical power distribution system. Specifically the power management application components process power measurement data and generate power measurement and reporting commands, transmitting them to the back end servers or IED's for execution. Referring now to Figure 4b, in one preferred operation a load is monitored by a IED where kvA ~~and~~ or kWh pulses 420 translated into data 422 are sent in real time over the network 424 to the Application via email or another transport protocol. If pre-processing is required 425a the raw pulse data is transported into a data collection server or component where it is translated into a format readable by the billing/revenue management component 426. Alternately, the billing/revenue management component may be configured to receive and process data without pre-processing 425b. Once sent to the billing/revenue management component 428 the data is compared and analyzed according to 430 for usage, consumption or billing revenue ranges against a pre-determined tariff structure 432 where any anomalies, excess or shortages are reported back to the IED in the form of a command to a power management function which controls the power flow and load distribution accordingly 434. The components further contact the required parties, such as the

consumer or provider of the load, over the network, forwarding power quality, billing, usage or consumption reports or any power management functions that were required against the set tariff structure according to 436.

Please replace paragraph **[0070]** with the following amended paragraph:

[0070] Figure 5a illustrates a preferred embodiment for a usage and consumption management application of the power management architecture. The IED 502 implements a power management function of controlling the source of electrical power for the load 501 from either energy supplier 1 505 or energy supplier 2 506. The application is designed to take advantage a deregulated marketplace and operate the load 501 from the most cost efficient energy supplier at the given time period. Which supplier is most efficient may fluctuate frequently as a function of the energy market and supply and demand for electrical power. Referring to Figure 5b, the IED 502 contains a usage and consumption management component which receives tariff and cost structures from multiple energy suppliers 505, 506. The component receives usage and consumption from the Load 501 and compares actual usage against multiple tariff structures choosing the most cost effective provider for a given load. Similarly the load management component 259-, as shown in Figure 2b, is utilized to connect and disconnect loads to and from the electrical distribution system during either low and high rate and demand periods, hence reducing the electrical power costs and demand. In the preferred embodiment the load management component ~~250~~ 259 is programmed to run in an automated fashion based on feedback from the system, however in an alternate embodiment the component is operated manually based on user input.

Please replace paragraph **[0071]** with the following amended paragraph:

[0071] For example, an IED 502 is connected to a power line 500 and associated load 501. The IED 502 measures power usage by the load and by converting a kWh or kVa pulse 511 into data 512 and transmits this consumption data 514 over a network 510 to a usage and consumption management application component operating on a back end server ~~511~~. The Usage and consumption management component receives and tracks cost and usage 516, 518

and upon receiving costs 520 compares rates for actual usage against multiple suppliers bids 522. Suppliers have the option to either push tariff structures to the application component or have tariff structures polled over the network. Once the most cost effective structure is determined by the usage and consumption management component, a command or function is sent to the IED 502 with the new tariff structure 523, 524 and the process is complete 530. Alternately, the new tariff structure is applied across to the billing/revenue management component where billing is applied to the usage and revenue reports are forwarded onto the appropriate parties.

Please replace paragraph **[0076]** with the following amended paragraph:

[0076] In one embodiment, a power reliability component 256 is provided in the IED to measure and compute the reliability of the power system. Power system reliability is discussed in commonly assigned U.S. Pat. Application Ser. No. 09/724,309[[ ]], now U.S. Patent No. 6,671,654, issued on December 30, 2003, titled "APPARATUS AND METHOD FOR MEASURING AND REPORTING THE RELIABILITY OF A POWER DISTRIBUTION SYSTEM", captioned above. In the preferred embodiment the component 256 computes and measures reliability as a number of "nines" measure. The component includes a function which compiles the reliability of the power from other components located on back end servers or IED's, giving a total reliability. This function also enables a user to determine which part of the distribution system has the most unreliable power. Knowing this enables the user to focus on the unreliable area, hopefully improving local power reliability and thus increasing overall reliability.

Please replace paragraph **[0077]** with the following amended paragraph:

[0077] For example, referring now to Figure 7, an IED 711 is connected to a network 710 and measures the reliability of the power distribution system 701 which supplies power from a power utility 700 to loads ~~724 726~~ 722 724 within a customer site 705. The customer also provides a generator 726 which supplies power to the loads 722 724 at various times. The customer measures the power reliability of the system for the load 722 724 using the associated IED 712 714 and considers it unreliable. One IED's 714 power reliability component polls the

other IED's 711 712 716 and determines the unreliable power source is coming from the generator 726. From this the customer can decide to shut off the power supply from the generator 726 in order to improve the power reliability of the system.

Please replace paragraph **[0079]** with the following amended paragraph:

[0079] Peer to peer communications between IED's and between back end servers are supported by the peer to peer management component 257. In the preferred embodiment peer to peer communications are utilized to transport or compile data from multiple IED's. For example, as shown in Figure 8, an IED 800 is connected to a network 810. Multiple loads 806 808 draw power from a power utility's 803 power distribution line 801 and each load is monitored by an IED 802 804~~804 806~~. An IED 800 polls load and billing data from all other IED's on the network on the customer site 802 804. Upon request, the IED 800 then transmits the load and billing data to the customer's billing server 814. In the preferred embodiment, the IED 800 communicates the load and billing data in a format which allows software programs inside the customer billing server 814 to receive the data directly without translation or reformatting.

Please replace paragraph **[0082]** with the following amended paragraph:

[0082] Transmission in XML format allows the recipient to receive XML-tagged data from a sender and not require knowledge of how the sender's system operates or data formats are organized. In a preferred embodiment communications between IED's connected to the network are transmitted in XML format. An IED utilizes XML based client application components included within the power management applications and transmits the data in XML format so little or no post-processing is required. Figure 9 illustrates an example of the preferred embodiment. An IED 902 is connected to a power distribution line 900 and associated load 901 owned by a customer 920 through connection 905. Power is supplied by a power utility's 908 power generator 903. The power utility also has a utility billing server 906 which compiles billing data from consumers drawing power from their power generators. The IED 902 is connected to the utility billing server via a network connection 910 and the IED 902 measures usage and consumption of the load, and other values associated with billing. The utility billing

server 906 contains billing software, such as a MV90, which requires data in a specified format. Either upon request, or a pre-scheduled times, the IED 902 transmits the usage, consumption and billing data associated with the load 901 to the utility billing server 906 in XML format. The customer also has a monitoring server 921 which is dedicated to receiving billing data from the IED 902 and reporting usage and consumption to the appropriate parties, the monitoring server 921 also reads data in a specified format for its associated monitoring software. The IED 902 transmits the same usage, consumption and billing data to the monitoring server 921 in XML format. By utilizing XML data formats the data transmitted by the IED 902 can be read by multiple servers or IED's 902 that do not require knowledge beforehand of the order or type of data that is being sent. In an alternate embodiment an IED 902 may also receive inputs from peripheral devices which may be translated and combined in the XML transmission. For example, the load 901 is a motor which contains a temperature probe. The temperature probe is connected to the IED 902 and allows the IED 902 to monitor the motor temperature in addition to power data on the power distribution line 900. The IED 902 is programmed to act on the temperature input by shutting down the motor if the temperature exceeds a pre-defined critical level by tripping a relay or other protection device (not shown). The IED 902 is further programmed to alert the customer monitoring server 921 and an alert pager 922 and if such an action takes place. This alert transmission is sent in XML format so both the server 921 and the pager 922, which may be configured to read incoming transmissions differently, receive the alert transmission in the form it was intended. It can be appreciated that the IED 902 can receive data in XML format from multiple sources without complete knowledge of their file transfer notations.

Please replace paragraph **[0083]** with the following amended paragraph:

[0083] In an alternate embodiment the back end servers include software that is generally included on a majority of existing computer systems, such as Microsoft Office™ software, manufactured by Microsoft Corporation, located in Redmond, Washington which includes the software applications Microsoft Word™ and Microsoft Excel™. The software receives data in a self describing format, such as XML, and the software includes off the shelf applications and processes such as a Microsoft Exchange Server, Microsoft Excel and associated Excel

Workbooks, Microsoft Outlook and associated Outlook rules, Microsoft Visio and associated Visio Stencils, Template files, and macros which allow the user to view and manipulate data directly from the IED. In one embodiment the IED transmission format makes use of existing standard software packages and does not require additional low level components, such as a communications server communicating with a serial port, which are normally required to interface to the IED communication ports. Further, the embodiment does not require a separate database, as the data is stored in the software programs. This allows a user to view data from the IED using standard computer software. For example, referring now to Figure 10, an IED 1002 monitors a load 1001 over power distribution network 1000 and passes the monitored data over network 1010 to a monitoring server 1011. The data can be transmitted using a variety of protocols, such as FTP, TCP/IP or HTTP, as described above. In the preferred embodiment data is transmitted in an HTTP based form or an SMTP form where the HTTP form is a self-describing format such as XML and the SMTP format is an email message. The monitoring server 1011 includes Microsoft Exchange Server 1022, Visio 1021, Microsoft Excel 1020 and Excel Workbooks 1023. The Excel software 1020 is capable of receiving data directly from the IED in a self-describing format, thus allowing the user to view real time load profiles or graphs and other monitored data directly from the IED in real time. The Visio software 1021 is also capable of receiving data directly from the IED in a self-describing format, thus allowing the user to process and view real time data in Visio format. Alternately, the IED transmits power quality, load, billing data or other measured or monitored values to the Excel Workbooks 1023 via the Exchange Server 1022. The Excel or Visio software is then capable of retrieving historical data directly from the workbooks.

Please replace paragraph **[0084]** with the following amended paragraph:

[0084] Referring to Figure 11, there is shown an exemplary screen display of a Microsoft Excel worksheet which is coupled with the IED 1002 as described above. In this example, the IED 1002 is a model 8500 meter, manufactured by Power Measurement Limited, in Victoria, British Columbia, Canada. The IED 1002 is coupled via a TCP/IP based network with a personal computer having at least 64 MB memory and 6 GB hard disk with a Pentium™ III or equivalent processor or better, executing the Microsoft Windows 98™ operating system and

Microsoft Excel 2000. The computer further includes Microsoft Internet Explorer ™ 5..0 which includes an XML parser that receives and parses the XML data from ~~fro~~ the meter and delivers it to the Excel worksheet. The worksheet displays real time data received directly from the IED 1002 in an XML format. As the IED 1002 detects and measures fluctuations in the delivered electrical power, it transmits updated information, via XML, to the worksheet which, in turn, updates the displayed data in real time. Note that all of the features of the Microsoft Excel program are available to manipulate and analyze the received real time data, including the ability to specify mathematical formulas and complex equations which act on the data. Further, display templates and charting/graphing functions can be implemented to provide meaningful visual analysis of the data as it is received. Further, the real time data can be logged for historical analysis. In one embodiment, the activation of a new IED 1002 on the network is detected by the worksheet which cause automatic generation of a new worksheet to receive and display data from the new device.

Please replace paragraph **[0110]** with the following amended paragraph:

[0110] HTTP Rendezvous is described in pending US Patent Application Serial No. 10/340,374 "PUSH BASED COMMUNICATIONS ARCHITECTURE FOR INTELLIGENT ELECTRONIC DEVICES", now abandoned[[U.S. Pat. No. _____]], which is hereby incorporated by reference.

Please replace paragraph **[0183]** with the following amended paragraph:

[0183] In a related scenario, the consumer of EM firmware or frameworks requires confidence that any firmware or frameworks they are uploading to EM Component 1420 ~~420~~ have not been forged or tampered with, and that they are released, supported versions. Signatures and certificates are either included in the firmware or framework file, or in a file separate from the firmware or framework. The certificates are revoked if there is a product hold on the firmware, or if it is out of date. The firmware upgrade program warns the user not to upgrade firmware that is unsigned, or firmware whose signing certificate has been revoked. A list of

valid and revoked certificates is stored on a mission critical server, which may be provided by the device manufacturer as a Security Service 1400.

Please replace paragraph **[0194]** with the following amended paragraph:

[0194] As described in the aforementioned co-pending application, there are various reasons including cost and legacy equipment that might prevent some EM Components in a system from having their own security module. Referring again to FIG. 1, the Security Module 1425 of EM Component 1420 provides access through channel 1460 to Security Services 1400 for the EM Components (not shown) located in EM Network 1480, and Security Module 1435 of EM Component 1430 provides access through channel 1465 to Security Services 1400 for the EM Components (not shown) located in EM Network 1485. EM Networks 1480, 1485 can be made more secure using physical security techniques.

Please replace the Abstract with the following amended Abstract:

A power management architecture for an electrical power distribution system, or portion thereof, is disclosed. The architecture includes multiple intelligent electronic devices ("IED's") distributed throughout the power distribution system to manage the flow and consumption of power from the system. The IED's are linked via a network to back-end servers. Power management application software and/or hardware components operate on the IED's and the back-end servers and inter-operate via the network to implement a power management application. The architecture provides a scalable and cost effective framework of hardware and software upon which such power management applications can operate to manage the distribution and consumption of electrical power by one or more utilities/suppliers and/or customers which provide and utilize the power distribution system. Security mechanisms are further provided which protect and otherwise ensure the authenticity of communications ~~transmitted via the network in furtherance of the management of the distribution and consumption of electrical power by the architecture~~.